



# Possibilities and Realities: Leveraging Innovative Technologies & Techniques to Meet Aggressive Remediation Timelines & Performance Goals

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## **POSSIBILITIES AND REALITIES IN LEVERAGING INNOVATIVE TECHNOLOGIES AND TECHNIQUES TO MEET AGGRESSIVE REMEDIATION TIMELINES AND PERFORMANCE GOALS**

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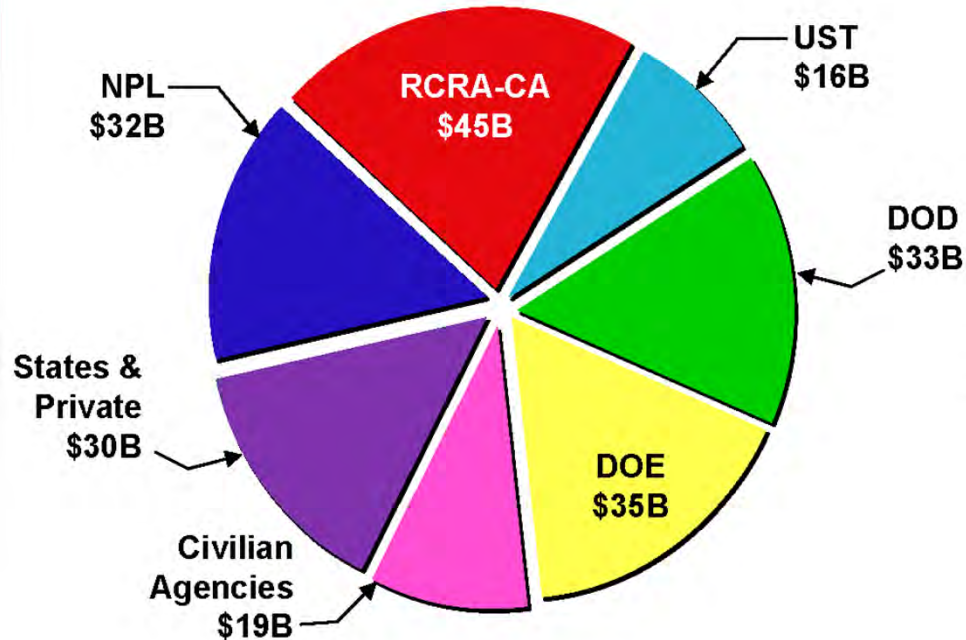
# Presentation Outline

- We are Here
- The Path to Here
- The Challenges Ahead
- Are Innovative Technologies the Solution?

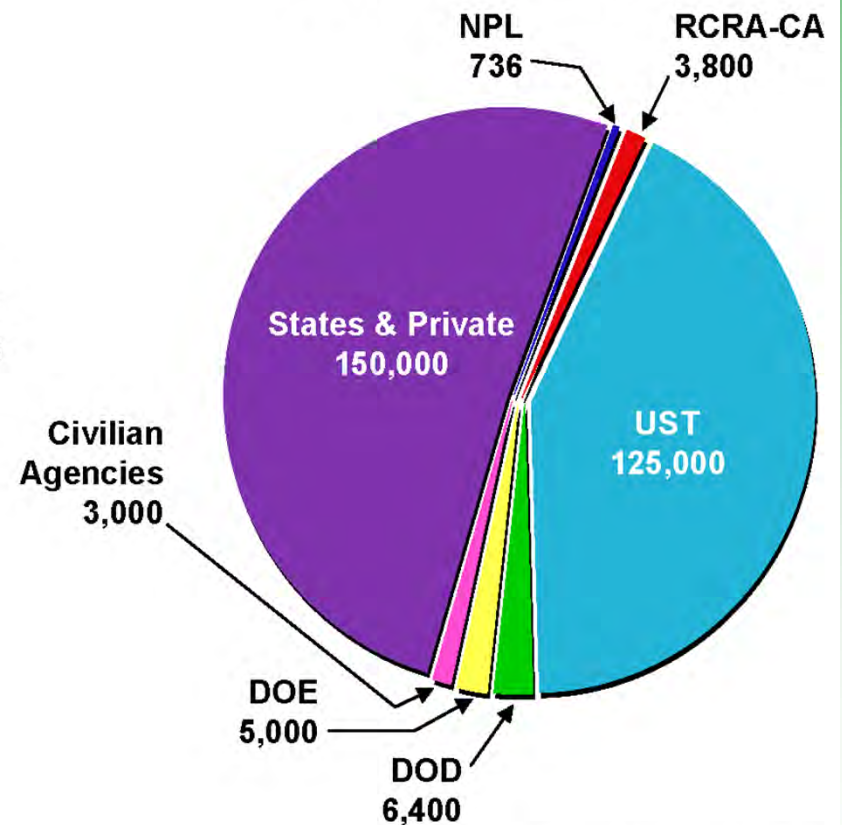
# We Are Here

(Cleanup horizon: 2004 – 2033)

Total = \$209 Billion



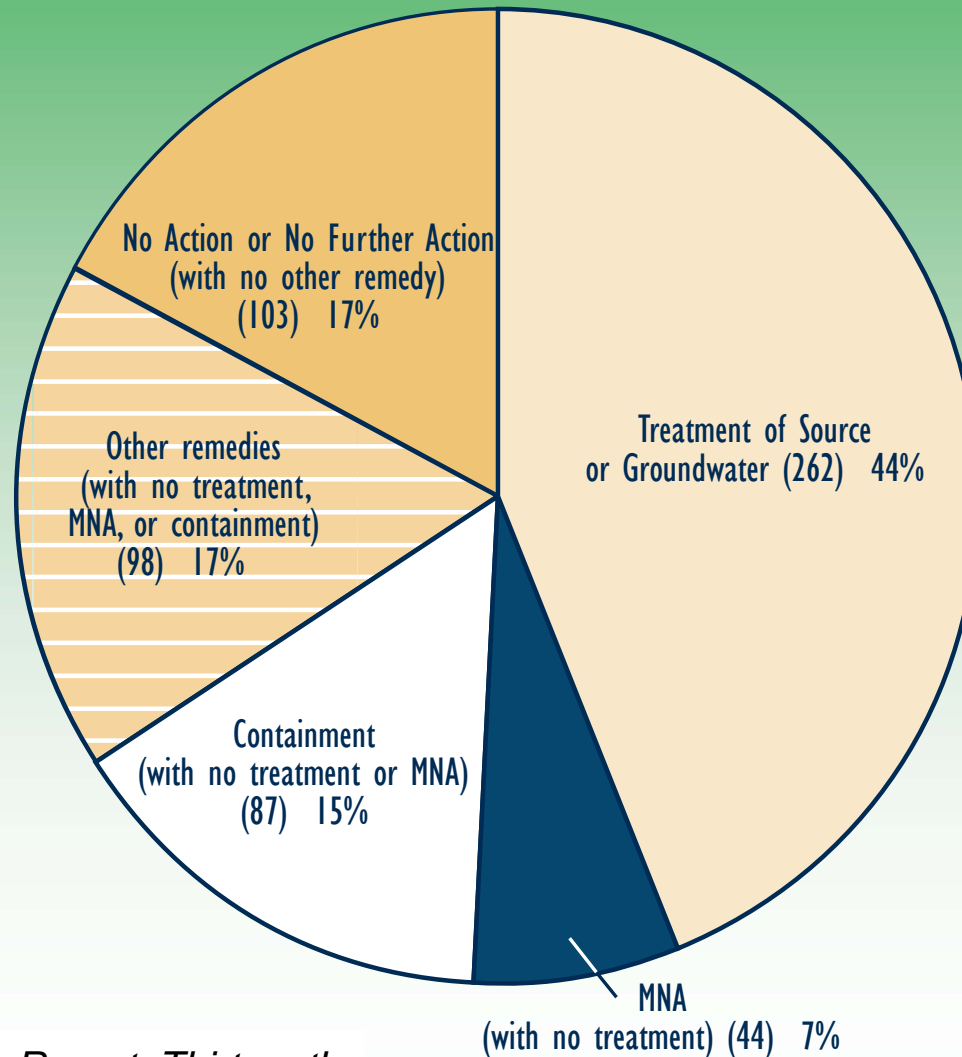
Total Sites = 294,000



Source: *Cleaning Up the Nation's Waste Sites: Markets and Technology Trends, 2004 Edition*, EPA 542-R-04-015

# The Path to Here

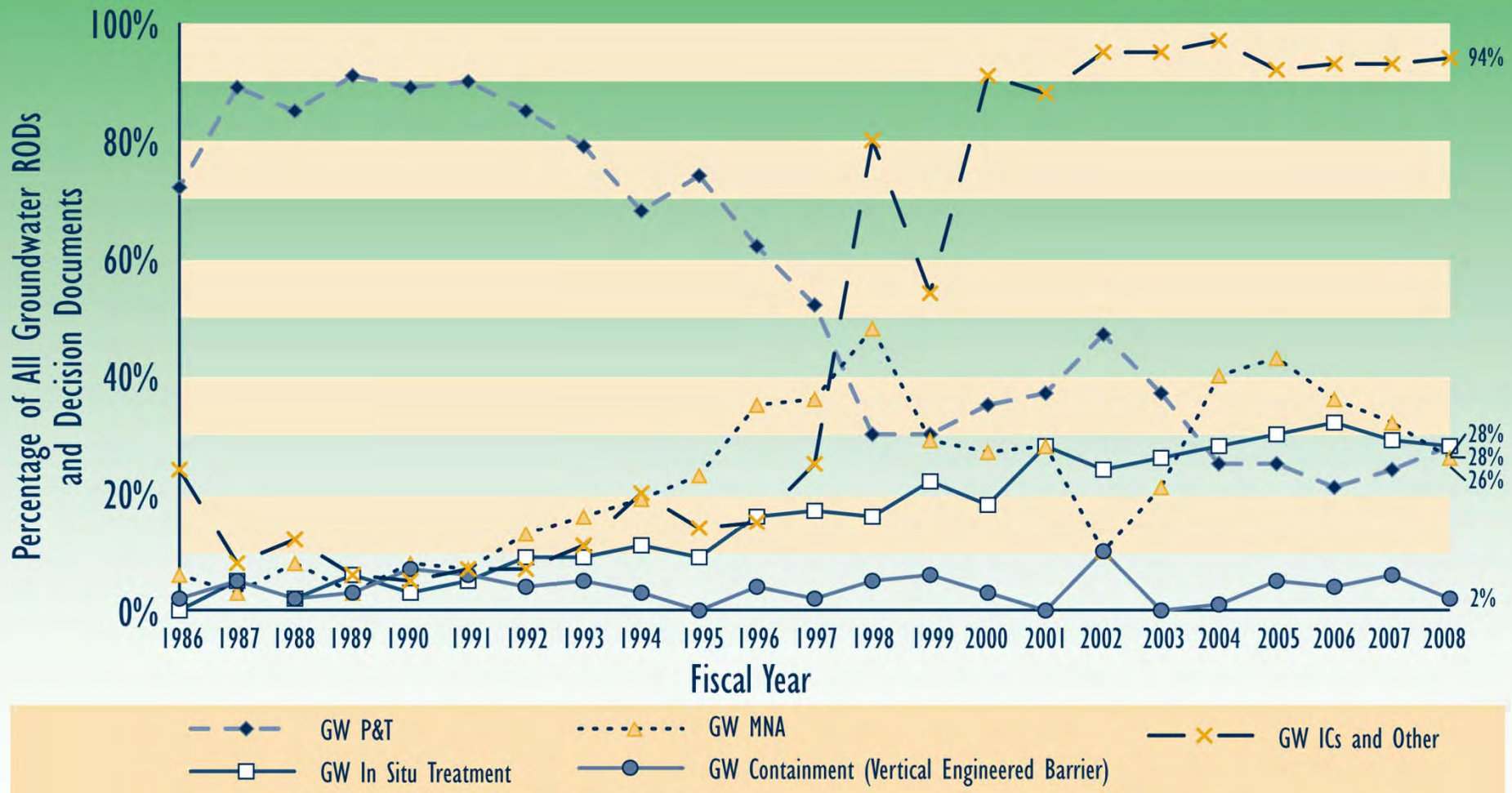
## (2005 - 2008) 594 Decision Documents



Source: *Superfund Remedy Report, Thirteenth Edition*, EPA-542-R-10-004

# The Path to Here: Trends in Superfund Groundwater Remedies

## (1986 - 2008) 1,727 Decision Documents



Source: *Superfund Remedy Report, Thirteenth Edition*, EPA-542-R-10-004

# The Challenges Ahead

For DoD:

- Response Complete = no contaminants pose a threat to human health and the environment for current land use (DoD/Conger, 2011)
- DoD Goals Memo: 90% RC by 2018, 95% by 2021
- 1970s to 2011:
  - ~ 25,000 DoD Environmental Restoration Sites
  - ~ 80% are RIP or RC
  - ~ \$2 billion/yr

80% → 90% in 6+ years, 80% → 95% in 9+ years,  
but...



Where Is All the Low-Hanging Fruit???



# The Challenges Ahead

For the Broader Remediation Community:

- Many difficult GW sites
- Stagnant/shrinking budgets
- Long list of innovations...no magic bullet
- Length of R&D timeline

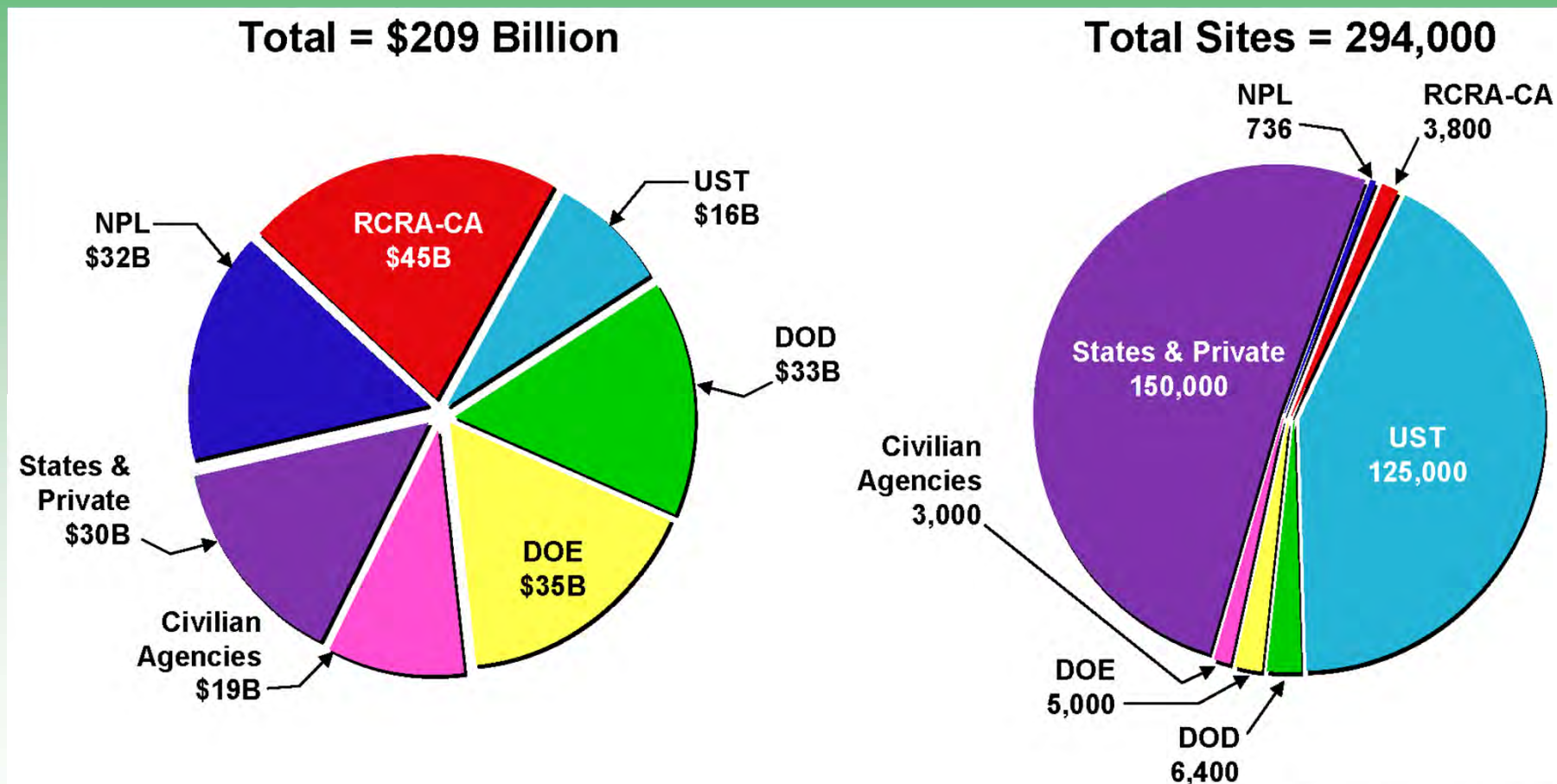


DC Properties™

# Are Innovative Technologies the Solution?

- Continue R&D for new technologies
- Better use of existing technologies
- Develop innovative techniques
- SMART exit strategies for sites

# Market Analysis



Source: *Cleaning Up the Nation's Waste Sites: Markets and Technology Trends, 2004 Edition*, EPA 542-R-04-015

# In Summary



- 1,000s of sites,  $10^{+9}$  \$
- 2018 is only 82 months away
- Leverage existing technologies better
- Collaborate on SMART exit strategies

# Shameless Plugs

- [www.epa.gov/superfund](http://www.epa.gov/superfund)
- [www.cluin.org](http://www.cluin.org)
  - Technology data
  - Focus areas
- [www.cluin.org/studio](http://www.cluin.org/studio)
  - Internet seminar schedule and registration
  - Archived seminars
- [www.itrcweb.org](http://www.itrcweb.org)
- [www.frtr.gov](http://www.frtr.gov)



# Questions?



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